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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,012	10/24/2003	Alex C. Toy	1023-288US01	9367

28863 7590 03/26/2007
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EXAMINER	
KAHELIN, MICHAEL WILLIAM	
ART UNIT	PAPER NUMBER
3762	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/693,012	TOY ET AL.	
	Examiner	Art Unit	
	Michael Kahelin	3762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20061102; 20060830*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *IDS: 20060523*.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see "Remarks", filed 9/8/2006, with respect to the rejection(s) of claim(s) 1-4, 10-18, 20-22, 27, 28, 30, 31, 33, 35-38, and 43-58 under 35 USC 102 and 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of new art.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Applicant's arguments, see "Remarks", filed 9/8/2006, with respect to the rejection(s) of claim(s) 20, 27, 29, 32, 33, and 34 under 35 USC 112(2) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the claims.

4. Claims 1-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. In regards to claim 1, "a control circuit to inhibit pulse skipping" is vague because nothing has been set forth to provide pulse skipping, i.e., pulse skipping cannot be

inhibited if it is not provided. Further, "based on a level of the battery voltage" is vague because nothing has been set forth to measure battery voltage.

6. In regards to claims 18 and 35, "inhibiting pulse skipping" is vague because no step/means for has been set forth to provide pulse skipping.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-3, 10, 11, 13, 35-37, 43, 44, 46, 51, 52, and 54 are rejected under 35 U.S.C. 102(e) as being anticipated by Carbunaru et al. (US 2004/0098068, hereinafter "Carbunaru").

9. In regards to claims 1, 3, 35, 37 and 51, Carbunaru discloses a neurostimulator (par. 0007) having a programmer (20) comprising a wireless telemetry circuit (46), a fixed-frequency boost converter (par. 0079), and a control circuit to inhibit pulse skipping based on a level of the battery voltage (par. 0078, 602). Because the entire element 20 of Figure 1 programs the implantable device, "20" is being interpreted as a "programmer". Further, because "a battery voltage" is inferentially included, i.e., no battery is positively claimed, the Examiner asserts the position that Carbunaru's

invention is inherently capable of utilizing a battery voltage, such as a 24 VDC battery (see Fig. 5 and par. 0078). Although Carbunaru utilizes AC power with an AC-DC adapter (par. 0078), this converted 24 VDC source could inherently be supplied by a 24 V battery (the boost converter is capable of converting a battery voltage because the input voltage is DC). Further, any of the voltages generated by Carbunaru's invention, e.g., the voltages of Figure 5, are "operating voltages" because they are voltages generated during the operation of the device. Lastly, because the operation of switching regulator (boost converter) 603 is based on the input voltage measured by 602, pulse skipping is inhibited and activated based on the battery voltage.

10. In regards to claims 2, 11, 13, 36, 44, 46, 52, and 54, the boost converter activates or inhibits pulse skipping (by shutting down or starting up, which also limits the voltage applied to the boost converter) when the operating voltage exceeds a threshold, i.e., when outside of the 20% threshold (par. 0078).

11. In regards to claims 10 and 43, the antenna is mounted internally within a housing associated with the programmer (the chair pad is "a housing").

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 4-9 and 38-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carbunaru. Carbunaru discloses the essential features of the claimed invention including a comparator (602) to activate and deactivate the boost converter, but does not expressly disclose that the boost converter is switched with a MOSFET transistor less a body diode drop, resistor voltage drop, external diode drop; or a back-to-back MOSFET pair. It is well known in the art to utilize MOSFET transistors for electronic switching applications to provide a low-cost, small, and low-power switching means without moving parts; and to provide resistors, diodes, and back-to-back transistors in power regulators to produce desired operational voltages from a fixed source voltage and to isolate the transience of a load from a power source and vice versa. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Carbunaru's invention by utilizing MOSFET transistors for switching the boost converter to provide a low-cost, small, and low-power switching means without moving parts; and to provide resistors, diodes, and back-to-back

transistors in the power regulator to produce desired operational voltages from a fixed source voltage and to isolate the transience of the load from the power source and vice versa.

15. Claims 14, 16, 18-28, 30, 31, 33, 47, 49, 55, and 57 rejected under 35 U.S.C. 103(a) as being unpatentable over Carbunaru in view of Meadows et al. (US 2003/0195581, hereinafter "Meadows"). Carbunaru discloses the essential features of the claimed invention except for providing a battery power source or utilizing a handheld neurostimulator programmer. Meadows teaches of providing a programmer with a battery power source (Fig. 7A, 277) and a handheld neurostimulator programmer (Figs. 5 and 6) to provide portability to a programming and charging device. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Carbunaru's invention with a programmer with a battery power source and a handheld neurostimulator programmer to provide portability to a programming and charging device.

16. Claims 12, 15, 17, 29, 32, 34, 45, 48, 50, 53, 56, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carbunaru (or Carbunaru in view of Meadows). Carbunaru (or Carbunaru in view of Meadows) discloses the claimed invention but does not disclose expressly the 2.4-2.6V threshold, the claimed type of battery cells, or the 2.2-3.2V operating voltage. It would have been an obvious matter of design choice to a person of ordinary skill in the art to modify the invention as taught by Carbunaru with the claimed threshold, battery cells, and operating range because applicant has not disclosed that the threshold, provides an advantage, is used for a

particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the threshold, battery cells, and operating voltage as taught by Carbunaru (or Carbunaru in view of Meadows) because both inventions properly function to program an implanted medical device. Therefore, it would have been an obvious matter of design choice to modify Carbunaru's (or Carbunaru in view of Meadows's) invention to obtain the invention as specified in the claims.

17. Claims 12, 15, 17, 29, 32, 34, 45, 48, 50, 53, 56, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carbunaru (or Carbunaru in view of Meadows). Carbunaru (or Carbunaru in view of Meadows) discloses the claimed invention but does not disclose expressly the 2.4-2.6V threshold, the claimed type of battery cells, or the 2.2-3.2V operating voltage. It is well-known in the art to utilize off-the-shelf battery cells (such as those claimed, which would also provide the claimed threshold and operating voltages) to allow a user to replace a power source with an inexpensive and easy-to-acquire battery. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Carbunaru's (or Carbunaru in view of Meadows') invention with off-the-shelf battery cells such as those claimed to allow a user to replace the power source with an inexpensive and easy-to-acquire battery.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Klosterman et al. (US 7,177,698) is one of many teachings of utilizing off-the-shelf batteries in electronic devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kahelin whose telephone number is (571) 272-8688. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on (571) 272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MWK
3/8/07

GEORGE R. EVANISKO
PRIMARY EXAMINER
3/12/7